SERVER RACK

FIELD OF THE INVENTION

The invention relates to a server rack adopted for use on computer servers, and particularly to a server rack that may be opened or closed easily without using hand tools for replacing electronic devices in the server to facilitate repairs and maintenance.

BACKGROUND OF THE INVENTION

Opening a server rack to replace damaged electronic devices is a task frequently performed in repairs and maintenance operations. The general server rack adopts a design that includes an upper lid and a base dock with corresponding screw holes formed thereon. Screws are used to engage with the screw holes to fasten the upper lid to the base dock. Such a design is not convenient for doing repairs and maintenance because repair people have to use hand tools to unfasten the screws to replace the electronic elements.

To remedy this problem, designing a server rack with improved opening and closing features to facilitate replacement of the electronic devices in the server is important.

SUMMARY OF THE INVENTION

The primary object of the invention is to provide a server rack that may be opened or closed easily without using hand tools for replacing electronic devices in the server to facilitate repairs and maintenance.

The server rack according to the invention aims at improving the convenience of opening and closing. It includes a base dock and an upper lid. The base dock has an

upper beam bridging two opposite ends of the base dock. The upper beam has a latch structure made of an elastic slice with one end fastened to the upper beam. The upper lid is mounted on the base dock and has a hook structure, which is a pushbutton with one end fastened to the upper lid. The hook structure corresponds to the latch structure and may be engaged with it to couple the upper lid on the base dock. Moreover, the latch structure may be driven by the hook structure and turn relative to the upper beam to release the coupling of the base dock and the upper lid. Thus the server rack may be easily opened or closed without using any hand tools for replacing the electronic devices in the server during repair operations.

The foregoing, as well as additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of the invention.

FIG. 2 is a fragmentary schematic view of the latch structure of the upper beam according to the invention.

FIG. 3 is a fragmentary exploded view of the latch structure of the upper beam according to the invention.

FIGS. 4 and 5 are schematic views of the invention in coupling and detaching conditions.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1, 2 and 3, the server rack according to the invention aims at

improving the convenience of opening and closing thereof. It includes a base dock 10 and an upper lid 20 that may be coupled together or separated.

The base dock 10 has an upper beam 11 which bridges two opposite ends thereof. The upper beam 11 includes a latch structure 111, second screw holes 112 and an opening 113.

The latch structure 111 is an elastic slice and has first screw holes 1113 on one end corresponding to the second screw holes 112 to receive fastening elements to fasten the latch element 111 to the upper beam 11. The latch structure 111 includes a latch section 1111 and a bucking section 1112. The latch section 1111 may be latched on the upper lid 20 to couple the upper lid 20 on the base dock 10. The bucking section 1112 corresponds to the opening 113 and may be driven by the upper lid 20 so that the latch structure 111 is turned relative to the upper beam 11 to release the coupling of the base dock 10 and the upper lid 20.

The upper lid 20 is mounted on the base dock 10, and includes a hook structure 21. The hook structure 21 corresponds to the latch structure 111 and may be engaged with it to couple the base dock 10 and the upper lid 20. The hook structure 21 is a pushbutton with one end fastening to the upper lid 20. The upper lid 20 further has a boss 22. Thus when the hook structure 21 moves, the boss 22 also is moved to drive the latch structure 111 to turn relative to the upper beam 11 and release the coupling of the base dock 10 and the upper lid 20.

Referring to FIGS. 4 and 5, to couple the base dock 10 and the upper lid 20, move the latch structure 111 of the base dock 10 corresponding to the hook structure 21 of the upper lid 20, and mount the upper lid 20 on the base dock 10 with the latch section 1111 of the structure 111 latching on the hook structure 21. The upper lid 20 may then be easily coupled on the base dock 10 without using any hand tools.

On the other hand, to release the coupling of the base dock 10 and the upper lid 20, exert a force on the hook structure 21 to move the boss 22. The boss 22 is moved towards the opening 113 to press the bucking section 1112. Hence the latch structure 111 turns about a fulcrum where it is fastened to the upper beam 11 to separate the latch structure 111 from the hook structure 21, and the coupling of the base dock 10 and the upper lid 20 may be released. Therefore the server rack may be easily opened or closed for replacing the electronic devices in the server during repair operations.

While the preferred embodiment of the invention has been set forth for the purpose of disclosure, modifications of the disclosed embodiment of the invention as well as other embodiments thereof may occur to those skilled in the art. Accordingly, the appended claims are intended to cover all embodiments which do not depart from the spirit and scope of the invention.